

Application No. 10/559,747
Amendment dated April 21, 2009
Reply to Office Action of January 26, 2009

Docket No.: 0038-0481PLUS1

AMENDMENTS TO THE DRAWINGS

The attached sheet of drawings includes changes to Fig. 1.

Attachment: Replacement sheet

REMARKS

The drawings have been objected to under 37 CFR 1.83(a) for the reasons set forth in the first paragraph on page 2 of the Examiner's Office Action letter. These objections are respectfully traversed.

It is the Applicant's position that the drawings do, in fact, show every feature of the present invention as recited in the claims, and that the objections raised by the Examiner merely relate to a misunderstanding of the terminology used by the Applicant in defining the various structures of the present invention. Thus, for example, when the electromagnetic pump of the present invention has a circular configuration, then the flange portions 15b can resemble tubes or cylinders. Similarly, the sealed chamber which is defined by the upper and lower frames would take the form of a cylinder when the electromagnetic pump has a circular configuration. With this in mind, it is believed that the claims of the present application do, in fact, refer to the features shown in Figs. 1-4 of the present application. However, the Applicant has submitted a formal copy of amended Figure 1 to properly identify element 15b in Fig. 1.

As the Examiner will note, the Applicant has added claim 21 to the present application, newly added claim 21 merely embellishing somewhat upon the structural interrelationship between the various elements of the electromagnetic pump of the present invention.

Claims 5, 6 and 9-13 have been rejected by the Examiner under 35 USC 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which the Applicant regards as the invention. This rejection is respectfully traversed.

As stated above in connection with the Examiner's objection to the drawings, it is believed that the language in the claims referred to by the Examiner as being indefinite is merely a matter of semantics and accordingly, it is believed that the present claims do, in fact, define the present invention in a clear and definite manner as supported by the specification and drawings of the present application.

In connection with claims 12 and 13, it should be noted by the Examiner that both of these claims have been amended to provide the necessary antecedent basis as referred to by the Examiner.

Claims 1-10, 14, 15 and 20 have been rejected by the Examiner under 35 USC 103(a) as being unpatentable over Roth et al., U.S. Patent 4,965,864. Claim 16 has been rejected by the Examiner under 35 USC 103(a) as being unpatentable over Roth et al. and Ohki et al., U.S. Patent 5,302,872 and further in view of Chang, U.S. Patent 6,783,335. Claim 17 has been rejected by the Examiner under 35 USC 103(a) as being unpatentable over Roth et al. in view of Ohki et al. and further in view of Black et al., U.S. Patent 6,971,861. Also, claims 18 and 19 have been rejected by the Examiner under 35 USC 103(a) as being unpatentable over Roth et al. in view of Ohki et al. and further in view of Dittrich, U.S. Patent 6,568,921. These rejections are respectfully traversed.

The present invention is directed to an electromagnetic pump that has a smaller and slimmer dimension, with reduced vibration during operation and which can be advantageously installed in electronic appliances. Accordingly, when a small and slender pump apparatus is required, such as when a pump apparatus is used to cool a small-scale electronic appliance, such as a notebook computer, there has been the problem that it is difficult to make the construction of a conventional pump apparatus sufficiently compact. The reciprocal movement of the piston also tends to produce vibration and noise when the pump apparatus is driven, which is problematic for electronic apparatus where the demands for controlled vibration and quiet operation have a high priority. Because of the structural interrelationship between the frame members, the magnetic plunger, the intake and outflow valves and the air-core electromagnetic coils the Applicant has defined an inventive contribution which achieves the objects of the present invention while eliminating the problems encountered in the prior art.

The Examiner has relied upon the Roth, Ohki, Chang and Dittrich patents in an attempt to show the electromagnetic pump of the present invention. However, none of the references relied upon by the Examiner show an electromagnetic pump having the structural interrelationship of component elements which cooperate to provide a pump which can be effectively made to be smaller and slimmer while reducing vibration during operation and possessing the necessary size

flexibility for its application in a plurality of electronic appliances. Thus, for example, the electromechanical linear motor of the Roth patent clearly does not have the structural relationship between the frame members, the plunger, the intake and outflow valves and the electromagnetic coils as defined by the claims of the present application. The respective devices of the Ohki patent, the Chang patent, the Black patent and the Dittrich patent suffer from the same deficiencies. Thus, the Applicant can find no way in which the prior art can be combined in order to arrive at the electromagnetic pump having the structural relationship as defined by the claims of the present application.

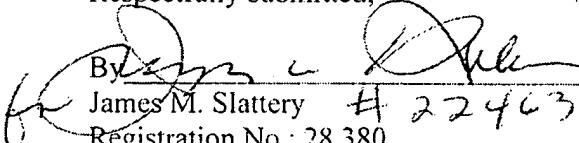
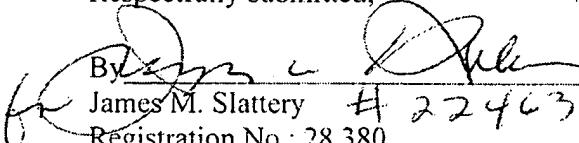
Accordingly, in view of the above amendments and remarks, reconsideration of the rejections and allowance of all of the claims of the present application are respectfully requested.

Should there be any outstanding matters that need to be resolved in the present application, the Examiner is respectfully requested to contact Joseph A. Kolasch Reg. No. 22,463 at the telephone number of the undersigned below, to conduct an interview in an effort to expedite prosecution in connection with the present application.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37.C.F.R. §§1.16 or 1.17; particularly, extension of time fees.

Dated: April 21, 2009

Respectfully submitted,


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Attachment: Replacement Fig. 1